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Atty. Dkt. No. 77060

Amdt. After Final dated October 4, 2005

Reply to final Office Action of July 27, 2005

REMARKS/ARGUMENTS

Claims 1-10 remain in this application. Claim 1 would be amended, upon entry of this amendment. Claims 11-16 have been cancelled.

The amendment raises no new issues requiring further consideration and/or search, and it raises no issues of new matter. In claim 1, it would be clarified that the flavoring compounds "contribute color and flavor," as described in the specification as filed (e.g., page 3, lines 15-20; page 9, lines 11-15).

Turning to the specific objections and rejections:

Claim Rejections under 35 U.S.C. § 102(b)

1. Claims 1-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Youngquist (U.S. Patent No. 4,211,694).

The final Office Action indicates that that these claims stand rejected for the same reasons set forth in the first Office Action dated January 31, 2005.¹ The Examiner's Response to Arguments have also been considered.

Applicants submit that the resulting product of the process steps recited in instant claim 1 is patentably distinct and different from product disclosed by Youngquist, for at least the following reasons.

¹ A Supplemental Office Action, restarting the period of response of the prior Office action dated 12/16/2004.

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Instant claim 1 recites that the soy-containing cheese product comprises a deflavored soy protein material which is prepared by a method which includes, in combination with other steps, the following process steps:

...

(b) solubilizing the soy proteins by adjusting the aqueous composition of (a) to a pH in the range of about 9 to about 12 and releasing the flavoring compounds;

(c) passing the pH-adjusted aqueous composition of (b) adjacent an ultrafiltration membrane having a molecular weight cutoff up to about 50,000 Daltons, while maintaining the pH in the range of about 9 to about 12, under suitable ultrafiltration conditions wherein the flavor compounds pass through the membrane, thereby deflavoring the soy material and retaining substantially all of the solubilized soy proteins;

... (Applicants' emphasis added by underlining).

As shown in Example 1 of the present application, the provision of the above-noted recited pH range values during solubilizing and ultrafiltration is essential for obtaining the desired deflavoring of the soy protein material. That is, soy protein material that was solubilized and then dialyzed at pH values in the range of about 9 to about 12 for each operation had significantly improved taste and aroma as compared to a comparison sample dialyzed at pH 6.7.

As also explained in the instant specification, the separation of the lower molecular weight flavoring compounds from the soy proteins using the ultrafiltration membrane under the selected operating conditions, as recited in claim 1, improves the color and flavor of the retained soy proteins and associated solids (instant specification: page 3, lines 15-20; page 9, lines 11-15).

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The only mention of a cheese type product by Youngquist appears to occur at col. 8, lines 42-49, describing adding various flavor elements to the protein products to provide, *inter alia*, vegetable-based meat in cheese type-spreads. Applicants could not locate any reference to a cheese analog or product at col. 3, lines 31-34 of Youngquist (see Office Action 12/16/2004, ¶3, p. 2). Clarification is requested.

Youngquist describes deflavoring vegetable seed materials, especially oleaginous seed protein material, using a ternary single-phase solution or solvent system of water, electrolyte, and a carbohydrate in a solution having a water activity of less than about 0.90 (abstract; col. 7, lines 45-47). After mixing, the oleaginous seed material is separated from the water/electrolyte/carbohydrate ternary solution by free draining, filtration, centrifugation, or combinations thereof (col. 7, lines 1-7).

Youngquist particularly describes conducting final desolventizing on the solvent-treated vegetable seed material, such as free draining, centrifugation followed by forced air drying, or filtration followed by drying, and preferably comprises forced air drying of drained flakes at a temperature of from about 40°C to about 90°C and steam desolventizing (col. 7, lines 30-36). Such heat treatments would tend to denature nutritional protein content of the solvent-treated vegetable seed material, and thus reduce the quality of the product, e.g., by reducing water binding capacity of the "nutritional" protein content, etc.

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Also, using centrifugation, free draining, or non-specific filtration as described by Youngquist to separate the ternary solution-treated vegetable seed particles from the ternary solution results in a non-specific assortment of particles having variable molecular weights. Youngquist nowhere indicates what particle size and percentage of flavoring compounds are removed from, and which are retained with, the seed material fraction. Therefore, the quantitative efficiency and outcome of the ternary solvent system described by Youngquist is unclear.

Also, Youngquist specifically defines "deflavoring" for purposes of that disclosure as referring to "removal of objectionable flavor notes" (col. 3, lines 31-34). Youngquist does not disclose removal of "lower molecular weight flavoring compounds" that can contribute to the color and flavor of the retained soy proteins (cf., instant claim 1, as amended; instant specification: page 3, lines 15-20 and page 9, lines 13-15).

In view of the above, Applicants submit that there is no reasonable factual basis to assume or infer that the structure and composition of Youngquist's soybean-cheese whey product anticipates or renders obvious the presently claimed soy-containing cheese product.

2. Claims 1-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Peng (U.S. Patent No. 4,105,803).

Applicants submit that the resulting product of the process steps recited in instant claim 1 is patentably distinct and different from product disclosed by Peng, for at least the following reasons.

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The final Office Action indicates that that these claims stand rejected for the same reasons set forth in the first Office Action dated January 31, 2005. The Examiner's Response to Arguments have also been considered.

In reply, Applicant notes that Peng admixes soymilk and cheese whey in predetermined proportion, and the resulting mixture is then coagulated with select precipitants to derive a "white, soft gelatinous mass ... having a desirable bland flavor" (col. 5, lines 19-29, abstract).

Peng describes pretreatment of the soymilk ingredient prior to its admixture with the cheese whey. Peng coarsely filters insoluble particulate residue which is not in suspension from the soymilk after soybeans are ground (col. 6, lines 2-23). However, Peng does not perform ultrafiltration (UF) on the soymilk, much less with pH maintained at about 9 to about 12; nor does Peng solubilize the soybeans in a prior step to UF to a pH of about 9 to about 12 to release flavoring compounds.

Instead, Peng subjects soymilk filtrate 32 obtained from the filtration operation to a heating stage, and, in particular, a boiling treatment (represented by block 36 in FIG. 1), which has the stated purpose of destroying trypsin inhibitor and inactivating lipoxygenase (col. 6, lines 24-27, 30-32).

The boiling treatment disclosed by Peng ostensibly is such an aggressive heat treatment that use of defoamers and reflux-type heating are suggested by Peng (col. 6, lines 32-37). Indeed, Peng explicitly delays combining the sweet cheese whey milk ingredient with the soymilk stream until after soymilk filtrate heating step is completed so that "... important protein content [of the sweet cheese whey milk] is not denatured" (see col. 7, lines 30-40).

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Therefore, the technical inference to be drawn is that Peng's boiling treatment of the soymilk would likely denature at least some nutritional protein content of the soymilk, and thus reduce the quality of the product, e.g., by reducing water binding capacity of the "nutritional" protein content thereof, etc.

Moreover, Peng does not use ultrafiltration or a comparable technique to remove any undesired small molecular weight compounds that contribute to undesired flavor and/or color that are already present in the soymilk filtrate. Instead, Peng is understood to use the intense heat treatment ("boiling" treatment) in an effort to inactivate lipooxygenase in the soymilk. Peng ostensibly assumes that the boiling treatment will be adequate to control off-flavors and color. Peng nowhere discloses or suggests that the boiling treatment will remove small molecular weight compounds already present in the soy protein material that contribute to off flavor or color.

It is generally known that lipid oxidation may occur relatively rapidly in soymilk. Peng does not nothing to address the issue of elimination of small molecular weight flavoring compounds which are or may be already present in the soymilk before the boiling heat treatment is performed, much less subject solubilized soy protein material to ultrafiltration using a membrane having a molecular weight cutoff up to about 50,000 Daltons, and while maintained at pH about 9 to about 12, for that purpose.

To the extent lipid oxidation occurs in Peng's soymilk before the boiling treatment, that off flavor or color would be expected to persist and linger in the boiled product, in the absence of a UF treatment as recited in the instant claims.

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In view of the above, Applicants submit that there is no reasonable factual basis to assume that the structure and composition of Peng's soybean-cheese whey product anticipates or renders obvious the presently claimed soy-containing cheese product.

Regarding dependent claims 2-10, applicants submit that they are patentable over the relied upon prior art for at least the same reasons as pointed out above relative to their ultimate parent claim (i.e., claim 1).

Applicants submit that the above-noted differences between the instant claims and the relied upon prior art are merely exemplary, and Applicants reserve their right to raise additional arguments regarding other differences, as desired or needed.

In view of the above, Applicants respectfully submit that neither anticipation nor a *prima facie* case of obviousness has not been established against any of the present claims 1-10 based on either Youngquist or Peng and, accordingly, they request withdrawal of these rejections.

CONCLUSION

In view of the above, it is believed that this application is in condition for allowance, and notice of such is respectfully requested.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

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By: Ramon R Hoch
Ramon R. Hoch
Reg. No. 34,108

120 South LaSalle Street
Suite 1600
Chicago, Illinois 60603-3406
Telephone: (312) 577-7000
Facsimile: (312) 577-7007